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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,451	11/12/2003	Dale Wolin	10012464-4	9435

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EXAMINER	
BERHANU, SAMUEL	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,451	WOLIN ET AL.	
	Examiner	Art Unit	
	Samuel Berhanu	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,8-11,14,15,17-20,25-28,30,31,39,42 and 43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9-11,14,15 and 17* is/are allowed.

6)☒ Claim(s) *1-3,8,18-20,25-28,30,31,33,39,42 and 43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 1-3,8-11,14,15,17-20,25-28,30,31,33,39,42 are withdrawn in view of the newly discovered reference(s) to US 6,191,560 , 5,936,383, 6,331,761, 6,433,751, 6,661,203. Rejections based on the newly cited reference(s) follow.

Double Patenting

2. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. US 6,661,203. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claim anticipates the examined claim.

3. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 11 of U.S. Patent No. US 6,661,203. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claim anticipates the examined claim

4. Claim 18 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 21 of U.S. Patent No. US 6,661,203. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claim anticipates the examined claim.

5. Claim 26 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 12 of U.S. Patent No. US 6,661,203.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claim anticipates the examined claim.

6. Claim 43 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 29 of U.S. Patent No. US 6,661,203. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claim anticipates the examined claim.

7. Claims 39 and 42 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 21 of U.S. Patent No. 6,661,203 in view of Kumar et. al. (US 6,331,761).

Regarding Claim 42, Claim 21 of U.S Patent No. does not disclose explicitly, the temperature sensor senses the loads. However, Kumar et. al. disclose in Column 16, lines 1-2 and Column 16 lines 16-22, the temperature sensor senses that temperature of the battery and the loads. It would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate a load temperature sensor in US Patent NO. 6,661,203 battery charger as taught by Kumar et. al. in order control the battery charging and providing terminating the discharging of the battery to give load the opportunity to cool to an acceptable level.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakakibara (US 6,433,517).

Regarding Claims 1 and 18, Sakakibara discloses in Figures 4 and 5, a charging circuit (30) for providing a charging current to the battery; a temperature sensor (38) positioned to senses a temperature of said battery; a controller (36) to said temperature sensor and said charging circuit and operable to control said charging circuit in accordance with said temperature, said controller being operable to minimize said charging current when said temperature is higher than a first predetermined threshold said controller being operable to set said charging current to a maximum value when said temperature is lower than a second predetermined threshold value, said maximum value being the battery's maximum specified charging current, and said second predetermined threshold value being the battery's maximum charging temperature (Noted that the controller is selecting a charging current based on the temperature of the battery, when the temperature is high then the charging current is adjusted to low and when the temperature is low then the charging current is adjusted to high, see also Column 2, lines 16-18, Column 3,lines 9-14, Column 5, lines 6-12); and a memory (39) coupled to said controller, said memory having a temperature and charging current look up table stored therein, whereby said controller accesses said look up table to set said charging current (Column 2, lines 11-12, lines 49-50, Column 5, lines 14-30).

Regarding Claims 2 and 19, Sakakibara discloses in Figures 4 and 5, wherein said controller continuously sets said charging current in accordance with said temperature (see Column 2, lines 59-63 and Abstract).

Regarding Claims 3 and 20, Sakakibara discloses in Figures 4 and 5, wherein said Controller periodically sets said charging current in accordance with said temperature (see Column 2, lines 59-63 and Abstract)

10. Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakakibara (US 6,433,517) in View of Kumar et. al. (US 6,331,761).

Regarding Claim 8, Sakakibara discloses in Figures 4 and 5, temperature sensor senses the temperature of the battery. However, Sakakibara does not disclose explicitly, the temperature sensor senses that temperature of the battery and the loads. However, Kumar et. al. disclose in Column 16, lines 1-2 and Column 16 lines 16-22, the temperature sensor senses that temperature of the battery and the loads. It would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate a load temperature sensor in Sakakibara's battery charger as taught by Kumar et. al. in order control the battery charging and providing terminating the discharging of the battery to give load the opportunity to cool to an acceptable level.

Regarding Claim 39, Sakakibara discloses in Figures 4 and 5, a charging circuit (30) for providing a charging current to the battery; a temperature sensor (38) positioned to senses a temperature of said battery; a controller (36) coupled to said temperature,= sensor and said charging circuit and operable to control said charging circuit in accordance with said temperature, said controller being operable to said charging

current to a maximum value when said temperature is lower than a first predetermined threshold value, said maximum value being the battery's maximum specified charging current, and said first predetermined threshold value being the battery's maximum charging temperature and said controller being operable to minimize said charging current when said temperature is higher than a second predetermined threshold value (Noted that the controller is selecting a charging current based on the temperature of the battery, when the temperature is high then the charging current is adjusted to low and when the temperature is low then the charging current is adjusted to high, see also Column 2, lines 16-18, Column 3,lines 9-14, Column 5, lines 6-12); Sakakibara does not disclose explicitly, the temperature sensor senses that temperature of the battery and the loads. However, Kumar et. al. disclose in Column 16, lines 1-2 and Column 16 lines 16-22, the temperature sensor senses that temperature of the battery and the loads. It would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate a load temperature sensor in Sakakibara's battery charger as taught by Kumar et. al. in order control the battery charging and providing terminating the discharging of the battery to give load the opportunity to cool to an acceptable level.

Regarding Claim 42, Sakakibara discloses in Figures 4 and 5, sensing a temperature related to the battery temperature(38) (noted that element 38, is sensing or detecting battery temperature); setting a charging current in accordance with sensed temperature, further including the step of setting said charging current to a maximum value when said temperature is lower than a first predetermined threshold value,

said maximum value being the battery's maximum specified charging current, and said first predetermined threshold value is the battery's maximum charging temperature and minimizing said charging current when said temperature is higher than a second predetermined threshold value (Noted that the controller is selecting a charging current based on the temperature of the battery, when the temperature is high then the charging current is adjusted to low and when the temperature is low then the charging current is adjusted to high, see also Column 2, lines 16-18, Column 3,lines 9-14, Column 5, lines 6-12); charging the battery at said charging current (the charger is charging the battery with allowable current based on the battery temperature by controller (34)) Sakakibara does not disclose explicitly, the temperature sensor senses that temperature of the battery and the loads. However, Kumar et. al. disclose in Column 16, lines 1-2 and Column 16 lines 16-22, the temperature sensor senses that temperature of the battery and the loads. It would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate a load temperature sensor in Sakakibara's battery charger as taught by Kumar et. al. in order control the battery charging and providing terminating the discharging of the battery to give load the opportunity to cool to an acceptable level.

11. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ng et. al. (US 5,936,383) in view of Sakakibara (US 6.191.560).

Regarding Claim 43, Ng et al. disclose in figure 1, a method of exercising a battery Coupled to a load, the method comprising the steps of: sensing a temperature related to the battery temperature and the temperature of the load (see column 5, lines 44-55)',

setting a discharging current in accordance with said temperature (see column 5, lines 37-40), discharging the battery at said discharging current (see column 7, lines 20-22), discontinuing said discharging step when a predetermined battery voltage is reached (see column 3, lines 22-25), except for Ng et al. do not disclose explicitly, setting a charging current in accordance with said temperature, said setting step further including the step of minimizing said discharging current when said temperature is higher than a first predetermined threshold value; and charging the battery at said charging current. However, Sakakibara discloses in Figures 4-9, setting a charging current in accordance with said temperature (Column 2, lines11-12, 21-26,) said setting step further including the step of minimizing said discharging current when said temperatures higher than a first predetermined threshold value; and charging the battery at said charging current (column 2, lines 32-34, Column 3,lines 60-67, and Column 4, lines 1-10) (Noted that the charging current is adjusted based on the temperature value, it is also evident that when the charging current is increased the discharging current is decreased). It would have been obvious to a person having ordinary skill in the art to use a charging means for charging the battery based on a battery temperature as taught by Sakakibara in Ng et. al. device in order to provide a battery charger capable of 100% charging a battery without overcharging and overheating.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB

KARL EASTHOM
SUPERVISORY PATENT EXAMINER